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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/278,601	07/21/1994	DAVID KNIPE	DFCI363A	6837

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EXAMINER	
MOSHER, MARY	

ART UNIT	PAPER NUMBER
1648	40

DATE MAILED: 02/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/278,601	Applicant(s) Knipe et al
	Examiner Mosher	Art Unit 1648

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *three* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *11/8/02* .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *12-22, 31, 36, and 41* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *12-15, 17-21, 31, 36, and 41* is/are rejected.

7) ☒ Claim(s) *16 and 22* is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Interference

Interference No. I104363 has been terminated by a decision adverse to applicant. *Ex parte* prosecution has been resumed.

Claims 1-9, 25-27, 29, 32-35, 37-40, and 42-49 stand finally disposed of in accordance with 37 CFR 1.663.

Claims 12-22, 31, 36, 41 remain pending.

Response to Arguments

Applicant argues that the Order terminating interference is erroneous in stating that claims 1-8 corresponded to Count 2, and that the Board's holding on the unpatentability of claims 1 and 5 was in error, because Knipe is entitled to the filing date of the parent application and his own publication is not prior art. However, these arguments are not timely. According to Interference Paper no. 107 pages 59-60, the Board specifically held that claims 1-8, 25-27, and 29 were unpatentable under 35 USC 102(b) over Nguyen. On reviewing selected portions of the interference file, it appears that Inglis advanced this argument in interference paper 36; Knipe chose not to oppose the argument in regard to claims 1-8 (interference paper no. 68), and was denied entry of an amendment to claims 25-27 and 29. A decision was made that these claims were unpatentable (paper no. 107). Knipe's request for reconsideration did not change any of the decisions (paper no. 123). Therefore, the issue has been finally disposed of for claims 1-8, 25-27, and 29, and examiner has no authority to reverse the decision of the board. See 37 CFR 1.658. Furthermore, since Knipe filed a paper abandoning the interference contest, "including count 2

thereof', it is too late now to argue that the order declaring count 2 listed the wrong claims as corresponding to the count.

Response to Amendment

Claims 31, 36, and 41 have been amended to stand as independent claims; the amendments also incorporate additional changes to the claims, so that they have different limitations than the claims which were pending during the interference. Specifically, claim 31 now requires mutation in a gene "essential for viral genome replication", and "rendering said virus replication defective" is now a separate step, not necessarily the result of the mutation. Claim 36 now requires a virus mutated in one or more early genes essential for viral genome replication. Claim 41 now requires mutation in a gene "essential for viral genome replication." The recitation of "viral genome replication" was previously rejected as new matter (paper 21, this application), and "genome" was deleted from the claims without argument (paper 25). However, on reconsideration, the instant examiner sees support for the recitation "viral genome replication" on specification page 2, lines 1-10, which discloses two species of mutation (ICP27 and ICP8) which are "required for viral DNA replication." Since the herpesvirus genome is DNA, "viral DNA replication" and "viral genome replication" are seen as synonyms. These amendments are understood to limit claims 31, 36, and 41 so that genes not required for genome replication are not the subject of the invention. E.g., these claims do not encompass mutations in essential late genes such as capsid protein or surface glycoprotein genes.

CFR 1.659(a) recommended rejections

Claims 12-15 and 17-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the scope of treating herpetic stromal keratitis, does not reasonably provide enablement for the full scope of treating immunomodulatory diseases. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. On review of interference paper 107, the Board made recommendation under CFR 1.659(a) that claims 12-15 and 17-21 be rejected under 35 USC 112, first paragraph, for lack of enablement, for reasons presented on pages 52-59 of interference paper 107. Accordingly, the examiner is bound by this recommendation unless an amendment or showing of facts not previously of record is filed, which overcomes the recommended rejection. See 37 CFR 1.659.

Interference paper 107, pages 73-81 also included a recommendation to reject claims "31 and 41" over prior art, "Inglis PCT application under 35 USC 102(b)." In interference paper 107, claims 36 and 41 were held to be unpatentable over this prior art, because the claims were drawn to an unrestricted genus of replication defective herpesvirus mutants, and not entitled to benefit of the parent application 07/922,912 for the unrestricted genus because '912 disclosed a restrictive genus of mutants which fail to produce progeny virus upon infecting a normal host cell (e.g., page 78). However, claim 41 has been amended to limit the claims to a restricted genus. Claim 41 has been amended to require mutation in one or more genes encoding a protein essential for viral genome replication. The disclosure supporting this restricted genus is identical in this application

and the '912 application. Therefore, the amendment is seen as overcoming the recommendation under 37 CFR 1.659 for rejection of claims 31 and 41 (paper 107, pages 73-81).

Claim Objections

Claim 41 is objected to because of the following informalities: in line 4, "encodes" should be "further encoding", to make grammatical sense. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 31 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 31, "rendering said virus replication defective" is now separate from the mutation in an essential gene, and the essential gene is now limited to one essential for genome replication. Is the intent still to require that the mutation render the virus defective, or is the intent to have, say, a less-than-lethal mutation in the essential gene and a separate defect to make the virus defective at another stage of virus replication (e.g., delete a coat protein gene, so the viral genome can replicate but the virus cannot complete its replication cycle)? In the interest of compact prosecution, it is assumed that the intent is that the mutation in the essential gene render the virus replication defective. However, this treatment does not relieve applicant from the burden of response to this rejection.

In addition, claims 31 and 36 are drawn to "a vaccine...eliciting a protective immune response". This is indefinite, because it is not clear if the required immune response is protective

against the herpesvirus or against the source of the heterologous gene(s). This affects the scope of the claims.

Claim Rejections - 35 USC § 103

On reconsideration, the rejection of claims 31, 36, and 41 as unpatentable over the lost interference count, in view of the abstract by Bostock, is withdrawn. On review of the full publication by Bostock, it is concluded that Bostock discusses herpes as a general recombinant DNA vector with potential to become a vaccine vector, not that it was generally known for use as a vaccine vector.

Claims 31, 36, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inglis et al (WO 92/05263) in view of McCarthy et al (Journal of Virology 63:18-27, 1989).

Inglis teaches a mutant herpesvirus for use in a vaccine, which is defective in respect to a gene essential for the production of infectious virus. Inglis also explicitly suggests that the virus be used as a vector for an immunogenic protein derived from a pathogen. It is noted that Inglis discloses a clear preference for mutations that do not prevent replication of the viral genome. However, identification of this preferred embodiment does not negate the document's broad teachings such as the statement on page 10 that "In theory, any gene encoding an essential protein should be a potential target for this approach to the creation of attenuated viruses." McCarthy teaches a gene encoding a protein essential for production of infectious virus. It would have been within the ordinary skill of the art to choose the essential gene taught by McCarthy for use

according to the broad teachings of Inglis, with reasonable expectation of success. The invention as a whole is therefore prima facie obvious, absent unexpected results.

Rejections similar to this were initially made in papers 18 and 21, and withdrawn in paper 29 in response to a 1.131 declaration demonstrating possession, prior to the Inglis publication, of a vaccine comprising a replication defective herpesvirus mutant. However, it has now been decided by the Board that the "heterologous" mutant virus vaccine is not the same invention as the mutant virus vaccine, and is not obvious over the mutant virus vaccine. The 1.131 declaration filed September 10, 1998, demonstrated conception and reduction to practice of the mutant virus vaccine prior to the April 2, 1992 publication date of Ingles et al (WO 92/05263). The declaration did not demonstrate conception and reduction to practice of the ***heterologous*** mutant virus vaccine, which is now seen to be a separate invention. Therefore, the rejection of claims 31, 36, and 41 as obvious over the combination of Inglis et al (WO92/05263) and McCarthy can properly be reinstated.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 12-17, 31, 36, and 41 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 09/034,464. Although the conflicting claims are not identical because they are slightly different in scope, they are not patentably distinct from each other because the copending claims involving "at least one early gene" are obvious embodiments within the scope of the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 12-22, 31, 36, and 41 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 13-34 of copending Application No. 08/903,830. Although the conflicting claims are not identical because they are

slightly different in scope, they are not patentably distinct from each other because the copending claims are drawn at least in part to obvious embodiments within the scope of the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

Claims 16 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, pending resolution of provisional double patenting issues.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary E. Mosher, Ph.D. whose telephone number is (703) 308-2926. The examiner can normally be reached on Monday -Thursday and alternate Fridays from 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (703) 308-4027. The fax phone number for this Group is now (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

February 11, 2003

MARY E. MOSHER
PRIMARY EXAMINER
GROUP ~~1800~~ 1600